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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/975,385	10/09/2001	Raymond Chi-Hing Chiu	56390US002	1262
32692	7590	12/01/2004	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY			LOPEZ, CARLOS N	
PO BOX 33427			ART UNIT	
ST. PAUL, MN 55133-3427			PAPER NUMBER	
			1731	

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/975,385

**Applicant(s)**

CHIU ET AL.

**Examiner**

Carlos Lopez

**Art Unit**

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2 IDS's.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: See Continuation Sheet.

Continuation of Attachment(s) 6). Other: Copy of considered IDS filed 4/28/04.

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/9/04 has been entered.

***Information Disclosure Statement***

Enclosed are the IDS filed on February 11, 2004, April 28, 2004 and 11/8/04. The IDS filed on April 28, 2004 was considered on 7/27/04, a copy is enclosed.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-6, 10, 11 and 16-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 866 487 in view WO 00/39831.

EP 0 866 487 teaches the claimed process of making a micro structured assembly. The method of EP 0 866 487 includes the steps of:

forming a substantially uniform coating of a curable material on a substrate (Figure 6), the coating defining a leading edge;

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contacting the coating with a mold starting at the leading edge (e.g. Figure 7), the mold forming in the curable material a plurality of barrier regions connected by intervening land regions (e.g. page 4, lines 6-7) having substantially uniform center thickness (e.g. Figure 6).

curing the curable material between the mold and the substrate (e.g. Figure 7, item 34, page 4, line 36', page 5, lines 43-44), and removing the mold (e.g. Figure 6).

EP 0 866 487 also discloses a curable material which comprises ceramic (e.g. page 4, line 55) and binder, debinding the curable material after curing (e.g. page 6, line 34), firing after removing the mold (e.g. page 6, lines 35-36), providing a plurality of electrodes on the substrate (p. 4, line 15).

EP 0 866 487 teaches of curing the curable material by allowing the radiation to travel through the substrate. EP 0 866 487 further teaches that the disclosed radiation curing can be achieved by other means such as emitting radiation at the nip of the mold and substrate (Page 5, lines 52ff) but is silent providing an optically clear mold such that the curable material is cured through the mold. However, WO 00/39831 teaches that a curable material pressed between a substrate and a mold can be cured through a mold which is achieved by molding the curable material (slurry as referred by WO 00/39831) onto a substrate where it is consequently cured by the exposure of radiation passing through the substrate and through the mold (See page 19 Example 17, specifically lines 20ff). Hence in view that EP 0 866 487 teaches that other curing methods may be

used, it would have been obvious to a person of ordinary skill in the art at the time the invention to have cured the curable material of EP 0 866 487 as taught by WO 00/39831 in order to consequently produce a micro-structured assembly.

It is noted that radiation curing that takes place through a mold as noted by WO 00/39831, would employ an optically clear mold to thus allow the radiation to cure the curable material.

Claims 12, 14, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 866 487 in view WO 00/39831 as applied to claims 1 and 11 above and in further view of Carre et al. (5,853,446) for the reasons as set forth above and further: EP 0 866 487 does not disclose that the coating area is smaller than the surface area of the substrate. Carre et al. discloses a method similar to that of EP 0 866 487 for forming ribs on a substrate. Note that Carre et al. discloses that the coating area is smaller than the surface area of the substrate (see e.g. Figure 4). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the coating to such a smaller area to obtain a product with the desired configuration.

The configuration of the coating and the land areas/electrodes is an obvious matter of product design choice dependent on the desired configuration of the final product.

Determination of the specific coating smoothness would have been well within the realm of routine experimentation to one having ordinary skill in the art at the time of the invention.

These parameters would have obviously been selected to optimize the process conditions and/or the properties of the final product.

Claims 7,8,9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0866 487 in view WO 00/39831 as applied to claims 1 and 12, in view of Carre et al. (5,853,446), and further in view of Chiu et al. 2401/0007682. Chiu et al. discloses a stretchable mold made from a polymer film, which is wound and unwound on rolls to impart a rib structure into a moldable material. It would have been obvious to one skilled in the art at the time of the invention to use this type of mold in the process of taught by the teachings of EP 0 866 487, WO 00/39831 and Carre in view of the teachings in these references that both types of molds are suitable for the formation of rib structures in moldable materials. The manufacture of a polymer film mold would be less expensive than the production of a metal mold.

### ***Response to Arguments***

Applicant's arguments filed 11/9/04 have been fully considered but they are not persuasive. Applicant argues that there is no motivation to cure the frit containing material through a mold as presently claimed. It is noted that applicant is arguing an embodiment of EP 0 866 487 which was not considered as reading on the instant invention. Applicant refers and argues the third embodiment when it is clear from the above rejection that the embodiment being considered as reading on applicant's claimed invention is the second embodiment recited in page 5.

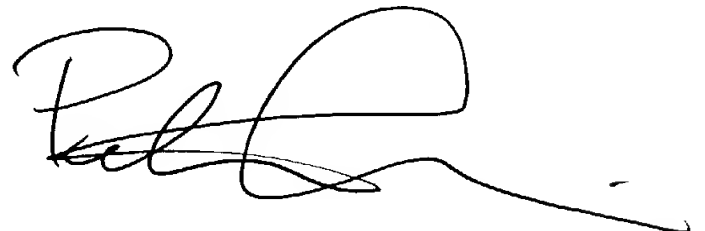
**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Lopez whose telephone number is 571.272.1193. The examiner can normally be reached on Mon.-Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571.272.1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CL



PETER CHIN  
PRIMARY EXAMINER